

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently amended): A mounting process simulation program on a computer that executes a simulation of a mounting process composed of a plurality of steps, the program causing the computer to execute:

a first simulation executing step of executing a simulation based on a first simulated condition selected for a first step;

a simulation condition deciding step of selecting a simulated result from the first simulation executing step as a simulation condition for a second step positioned subsequent to the first step; and

a second simulation executing step of executing a simulation of the second step based on a second condition comprising the simulation condition and at least a third condition that yields a second simulation result that is displayed on a display device, wherein the first simulation executing step and the second simulation executing step are each directed to different successive steps in the plurality of steps composing the mounting process, and the simulation of the second step is at least partially dependent on the simulated result selected from the first simulation executing step such that at least two different simulated conditions are employed in each simulation executing step performed after the first simulation executing step, wherein the successive steps comprise at least two of printing, mounting, and reflow.

Claim 2 (Currently amended): A mounting process simulation program according to claim 1, wherein simulated analysis result data are generated via simulation at every step based on a plurality of conditions which were previously simulated, and

the second simulation executing step executes the simulation of the second step by sampling the simulated analysis result data which is simulated based on the second condition.

Claim 3 (Currently amended): A mounting process simulation program according to claim 1, wherein simulated analysis result data are generated at every step based on a plurality of simulated conditions which were previously simulated, and

the second simulation executing step executes the simulation of the second step by executing an interpolation calculation using [[the]] simulated analysis result data which is simulated based on a preceding or succeeding condition of the second condition.

Claim 4 (Currently amended): A mounting process simulation program according to claim 2 or 3, wherein the simulated analysis result data are generated at every step based on a plurality of conditions which were previously simulated, and

the second simulation executing step executes the simulation of the second step by converting the simulated analysis result data generated by other device into a predetermined data format.

Claim 5 (Currently amended): A mounting process simulation program according to claim 4, wherein at least one of the following types of data are generated by an external system and is selected as the simulated analysis result data: data simulated previously at every step via a CAE tool, mounting resultant data from a mounting equipment provided to a mounting site at every step, the mounting resultant data comprising fraction defective data and production results; and [[experimental]] simulated data derived by an experiment in which an operation in each step is supposed simulated;

wherein the type of data selected as the simulated analysis result data is converted to a ~~common~~ the predetermined data format.

Claim 6 (Previously presented): A mounting process simulation program according to claim 1, further comprising an animation displaying step of displaying three-dimensionally an animation to indicate a result simulated in the second simulation executing step on a display device, by reading previously-stored animation elements based on a definition file in which an operation sequence is defined at every step.

Claim 7 (Previously presented): A mounting process simulation program according to claim 1, wherein the second simulation executing step includes a condition acquiring step of reading a condition selected in response to an input from a condition database in which a plurality of conditions are stored previously in combination, and adding the condition to the second condition.

Claim 8 (Previously presented): A mounting process simulation program according to claim 7, wherein the condition acquiring step further reads data from a CAD system in response to the input and adds the data to the second condition.

Claim 9 (Previously presented): A mounting process simulation program according to claim 1, wherein the first simulation executing step executes the simulation to contain production variation in the first step,

the simulation condition deciding step decides the result simulated in the first simulation executing step to contain the production variation as the simulation condition, and

the second simulation executing step executes the simulation of the second step based on the second condition which contains the production variation.

Claim 10 (Currently amended): A mounting process simulation program according to claim 1, wherein the first simulation executing step executes the simulation based on a change of a control item set in the first step as the first simulated condition,

the simulation condition deciding step decides the result simulated based on the change of the control item in the first simulation executing step as the simulation control, and

the second simulation executing step executes the simulation of the second step based on the second condition which contains the result simulated based on at least the change of the control item.

Claim 11 (Previously presented): A mounting process simulation program according to claim 1, further causing the computer to execute a reliability evaluating step of executing a reliability evaluation of a product manufactured in the mounting process by using the result simulated in the second simulation executing step.

Claim 12 (Currently amended): A mounting process simulation program according to claim 1, further causing the computer to execute a fraction defective calculating step of calculating a fraction defective of a product manufactured in the first simulated step and the second simulated step, by using simulated results which were simulated in the first simulation executing step and the second simulation executing step.

Claim 13 (Currently amended): A mounting process simulation system provided to steps of a mounting process composed of a plurality of steps to execute a simulation of the mounting process, comprising:

an inputting portion for inputting a plurality of simulated conditions to execute the simulation;

an executing portion for executing the simulation based on condition input from the inputting portion; and

an outputting portion for outputting a result of the simulation executed by the executing portion;

wherein the executing portion includes:

a condition table forming portion that forms a condition table that lists a simulation condition of a second step positioned subsequently to a first step, whereby the condition table is formed by using a simulation result simulated based on a first simulation condition selected for at least a first step, and

a simulation result outputting portion that executes the simulation of the second step based on simulated condition data from the condition table and a condition input from the inputting portion and outputs a result to the outputting portion.

Claim 14 (Currently amended): A mounting process simulation method of executing a simulation of a mounting process composed of a plurality of steps comprising:

a first simulation executing step of executing a simulation based on a first simulated condition selected for a first step to yield a first simulated result;

a simulation condition deciding step of selecting [[a]] the first simulated result from the first simulation executing step as a simulation condition for a

second step positioned performed subsequent and in succession with respect to the first step; and

a second simulation executing step of executing a simulation of the second step based on a second condition containing at least the simulation condition and at least a third condition to yield a second simulated result that is displayed on a display device, wherein the first simulation executing step and the second simulation executing step are each directed to different and successive steps in the plurality of steps composing the mounting process, wherein the successive steps comprise at least two of printing, mounting, and reflow.

Claim 15 (Currently amended): The mounting process simulation program according to claim 1, wherein the first, second and third conditions are selected from a plurality of simulated conditions.

Claim 16 (Currently amended): The mounting process simulation program according to claim 15, wherein the plurality of simulated conditions comprises solder conditions, printing mask conditions, printing device conditions, substrate conditions, mounting device conditions, solder printing conditions, parts conditions, and reflow furnace conditions.

Claim 17 (Previously presented): The mounting process simulation method according to claim 14, wherein the first, second and third conditions are selected from a plurality of conditions.

Claim 18 (Previously presented): The mounting process simulation method according to claim 17, wherein the plurality of conditions comprises solder conditions, printing mask conditions, printing device conditions, substrate conditions, mounting device conditions, solder printing conditions, parts conditions, and reflow furnace conditions.

Claim 19 (Previously presented): The mounting process simulation method according to claim 17 further comprises displaying the second simulated result as a three-dimensional animation by reading previously-stored animation elements based on a definition file in which an operation sequence is defined at every step.